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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/033,715	12/28/2001	Robert W. Bower	BOW5075.04A	8633
8156	7590	07/14/2004	EXAMINER	
JOHN P. O'BANION O'BANION & RITCHEY LLP 400 CAPITOL MALL SUITE 1550 SACRAMENTO, CA 95814			GEBREMARIAM, SAMUEL A	
			ART UNIT	PAPER NUMBER
			2811	

DATE MAILED: 07/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/033,715

Applicant(s)

BOWER, ROBERT W.

Examiner

Samuel A Gebremariam

Art Unit

2811

Am

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-12 and 16-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-12 and 16-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claim 16 is objected to because of the following informalities: On line 2, the word "claim" appears to have a typographical error. Furthermore claim 16 depends on cancelled claim 13. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no support in the specification for the limitation of "an amorphous insulating layer".
4. Claims 3-5 are also rejected as being dependant on rejected independent claim 1.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 1, 3-12 and 16, 17 and 19-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shealy et al. US patent No. 5,949,182 in view of Cathey et al. US patent No. 5,391,259 and in further view of admitted prior art.

Regarding claims 1, 6, 8-11, Shealy teaches (fig. 6) a multi-layer light emitting device, comprising: an electron emitting layer (54) and a direct bandgap light-emitting layer (56) over the electron-emitting layer.

Shealy does not state in the embodiment of fig. 6 that polysilicon is the preferred material for electron emitting layer. Shealy teaches in the embodiment of fig. 6 silicon can be used as the electron-emitting layer.

Cathey teaches (col. 6, lines 6-12) polysilicon substrate can be used to form electron-emitting layer in the process of fabricating atomically sharp field emission tips.

Admitted prior art teaches (page 5, last paragraph) that it is well known that oxidized polysilicon promotes field emission of electrons.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the polysilicon substrate taught by Cathey in the structure Shealy since it is easier to process polysilicon than single crystal silicon.

Furthermore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the oxidized polysilicon taught by admitted prior art in the combined structure of Shealy and Cathey in order to promote field emission of electrons.

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The combined structure of Shealy, Cathey and admitted prior art is capable of allowing the electron emitting layer to pass through the insulating layer and into the light emitting-layer and are converted into bandgap radiation by the light emitting-layer.

Regarding claim 1, the combined structure of Shealy, Cathey and admitted prior art teaches amorphous insulating layer since oxidized polysilicon is an amorphous insulating layer.

Regarding claim 3, Shealy teaches substantially the entire claimed structure of claim 1 above including the insulating layer is silicon dioxide (admitted prior art, page 2 last paragraph).

Regarding claims 4, 7 and 12, Shealy teaches substantially the entire claimed structure of claim 1 above including the light-emitting layer is GaInP (col. 7, lines 1-15).

Regarding claim 5, Shealy teaches substantially the entire claimed structure of claim 1 above including the insulating layer and the electron-emitting layer is an oxidized polysilicon layer (admitted prior art, page 2 last paragraph).

Regarding claim 16, Shealy teaches substantially the entire claimed structure of claims 1, 6, 8 and 10 above including the light-emitting panel is arranged in a mosaic array (Shealy fig. 13).

With regards to claims 17 and 19-28, the apparatus claims are necessitated by the device structure and method steps are taught by Shealy, Cathey and admitted prior art.

Response to Arguments

7. Applicant's arguments with respect to claims 1, 3-12 and 16, 17 and 19-28 have been considered but are moot in view of the new ground(s) of rejection.


Response to Arguments

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel A Gebremariam whose telephone number is (571)-272-1653. The examiner can normally be reached on 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (571) 272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SAG
July 11, 2004


ORI NADA ✓
patent examiner